

DERWENT-ACC-NO: 2004-158910

DERWENT-WEEK: 200416

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TITLE: Modular device for generating multiple sliding
high voltage discharges between multiple electrodes
in the form of single or double bladed daggers
arranged around each injection nozzle

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PRIORITY-DATA: 2002FR-0008648 (July 9, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE
PAGES MAIN-IPC		
FR 2842389 A1	January 16, 2004	N/A
030 H05H 001/48		

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO
APPL-DATE		
FR 2842389A1	N/A	2002FR-0008648
July 9, 2002		

INT-CL (IPC): B01D053/32, H05H001/48

ABSTRACTED-PUB-NO: FR 2842389A

BASIC-ABSTRACT:

NOVELTY - The electrodes (1) are fitted into triads resembling stars with three arms at 120 deg. to each other, and placed round multiple injection nozzles (3), so the electrodes + nozzle assembly forms a honeycomb cell. A single high voltage 3-phase generator supplies all the electrodes, directly or via resistances. The cells are placed side by side and stacked in a reactor

DETAILED DESCRIPTION - The three poles (phases) R, S and T of the generator are connected directly to some principal electrodes (r, s, t) and via resistances to some intermediate electrodes (r', s', t') to start, maintain and re-start three sliding discharges across the length of the three sides of the electrodes in each cell. Two discharges slide between one side of the principal electrode and two sides of the two intermediate electrode forming the honeycomb. The third discharge slides between the two sides of the intermediate electrodes in the honeycomb. Many honeycomb elements are placed side by side to form a movable assembly which can be placed in the same reactor for treating the diluted material. A number of movable assemblies can be connected in the form of complex structures called clusters, groups and/or cells filling a spaced such as inside a plasma reactor. The generator produces a voltage between 5 and 21 kV to all the electrodes simultaneously. The resistances are between 0.2 and 2M approx. W (typically 0.5M approx. W) and a dissipation power of between 0.5 and 5W (typically 2W). The current of each discharge does not exceed 5A. All the principal electrodes are connected directly to the respective pole (r to R, s to S, t to T) and all the intermediate electrodes are connected to the respective pole via a resistance. Only one electrode of each triad is a principal electrode and the two other intermediate electrodes are connected to the other two poles, so a triad contains (r, s', t' or r', s, t' or r', s', t) Each electrode is double sided and part of two adjacent honeycomb cells. Each electrode in the cell is at a different alternative potential from the same 3-phase supply, with the differences reaching maximum amplitudes of 7 to 30 kV before the discharges happen. If a cell is not surrounded by other cells, the electrode(s) on the outside are single

sided.

USE - An energy source in many industrial applications such as treatment of gas containing hydrogen sulfide, removal of solvents, transformation of N₂O into NO_x, elimination of carbon deposits, destruction of sulphur and nitrogen oxides, dehalogenation of organic compounds.

ADVANTAGE - This assembly of multiple electrodes allows a large amount of material to be treated in a single reactor, with the reactor only needing access for the three phase cables

DESCRIPTION OF DRAWING(S) - The figure shows a honeycomb cell

Electrode 1

Connector 2

Nozzle 3

CHOSEN-DRAWING: Dwg.1/9

TITLE-TERMS: MODULE DEVICE GENERATE MULTIPLE SLIDE HIGH VOLTAGE DISCHARGE

MULTIPLE ELECTRODE FORM SINGLE DOUBLE BLADE DAGGER ARRANGE
INJECTION NOZZLE

DERWENT-CLASS: E19 E36 J01 X25

CPI-CODES: E06-A03; E10-H04; E11-N; E11-Q02; E31-F01A; E31-F01B;
E31-H02;
E31-N04D; J01-E02H;

EPI-CODES: X25-B03A;

CHEMICAL-CODES:

Chemical Indexing M3 *01*

Fragmentation Code

C101 C116 C540 C730 C800 C801 C802 C804 C805 C806
M411 M424 M740 M750 M904 M905 M910 N120 N163 Q431
Q436 Q439

Specfic Compounds

01785K 01785X A01M1K A01M1X

Registry Numbers

1785U

Chemical Indexing M3 *02*

Fragmentation Code

C107 C108 C520 C730 C800 C801 C802 C803 C804 C807
M411 M424 M740 M750 M904 M905 N120 N163 Q431 Q436
Q439

Specfic Compounds

01901K 01901X

Registry Numbers

1901U

Chemical Indexing M3 *03*

Fragmentation Code

C108 C307 C520 C730 C800 C801 C802 C803 C804 C807
M411 M424 M740 M750 M904 M905 M910 N120 N163 Q431
Q436 Q439

Specfic Compounds

01902K 01902X

Registry Numbers

1902U

Chemical Indexing M3 *04*

Fragmentation Code

C107 C108 C307 C520 C730 C800 C801 C802 C803 C804
C807 M411 M424 M740 M750 M904 M905 M910 N120 N163
Q431 Q436 Q439

Specfic Compounds

01881K 01881X

Registry Numbers

1881U

Chemical Indexing M3 *05*

Fragmentation Code

C108 C216 C540 C730 C800 C801 C802 C803 C804 C805
M411 M424 M740 M750 M904 M905 M910 N120 N163 Q431
Q436 Q439

Specfic Compounds

01674K 01674X

Registry Numbers

1674U

Chemical Indexing M3 *06*

Fragmentation Code

C108 C316 C540 C730 C800 C801 C802 C803 C804 C805
M411 M424 M740 M750 M904 M905 M910 N120 N163 Q431
Q436 Q439

Specfic Compounds

01675K 01675X

Registry Numbers

1675U

Chemical Indexing M3 *07*

Fragmentation Code

C106 C810 M411 M424 M740 M750 M904 M905 M910 N120
N163 Q431 Q436 Q439

Specfic Compounds

01669K 01669X 05085K 05085X

Registry Numbers

1669U

Chemical Indexing M3 *08*

Fragmentation Code

H6 H600 H607 H608 H609 H681 H682 H683 H684 H685
H686 H689 M210 M211 M212 M213 M214 M215 M216 M220
M221 M222 M223 M224 M225 M226 M231 M232 M233 M250
M280 M281 M311 M312 M313 M314 M315 M316 M320 M321
M331 M332 M333 M334 M340 M342 M343 M344 M363 M391
M416 M424 M620 M740 M750 M904 M905 N120 N163 Q431
Q436 Q439

Markush Compounds

200122-18701-K 200122-18701-X

Chemical Indexing M3 *09*

Fragmentation Code

G001 G002 G010 G011 G012 G013 G014 G015 G016 G017
G018 G020 G021 G022 G029 G040 G100 G221 H6 H600
H607 H608 H609 H641 H642 H643 M280 M320 M414 M424
M510 M520 M531 M540 M740 M750 M904 M905 N120 N163
Q431 Q436 Q439

Markush Compounds

200122-18702-K 200122-18702-X

Chemical Indexing M3 *10*

Fragmentation Code

D010 D020 D040 H6 H600 H607 H608 H609 H621 H622
H623 M280 M320 M412 M424 M511 M520 M530 M540 M740
M750 M904 M905 N120 N163 Q431 Q436 Q439

Markush Compounds

200122-18703-K 200122-18703-X

UNLINKED-DERWENT-REGISTRY-NUMBERS: 1669U; 1674U ; 1675U ; 1785U ;
1881U ; 1901U
; 1902U

SECONDARY-ACC-NO:

CPI Secondary Accession Numbers: C2004-063359

Non-CPI Secondary Accession Numbers: N2004-127001